

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
EPA NEW ENGLAND  
OFFICE OF ECOSYSTEM PROTECTION  
ONE CONGRESS STREET  
SUITE 1100 (MAIL CODE: CMP)  
BOSTON, MASSACHUSETTS 02114-2023**

**FACT SHEET**

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES**

**PUBLIC NOTICE START AND END DATES:** August 17, 2007 – September 15, 2007

**PUBLIC NOTICE NUMBER:** NH-020-07

**CONTENTS:** 19 pages including Attachments A through D.

**NPDES PERMIT NO.:** NH0100382

**NAME AND MAILING ADDRESS OF APPLICANT:**

Town of Hinsdale  
Board of Selectmen  
P.O. Box 13  
Hinsdale, New Hampshire 03451

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

Hinsdale Water and Sewer Department  
Hinsdale Wastewater Treatment Plant  
120 River Road  
Hinsdale, New Hampshire 03451

**RECEIVING WATER:** Ashuelot River (Hydrologic Basin Code: 01080201)

**CLASSIFICATION:** B

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## **I. Proposed Action, Type of Facility and Discharge Location.**

The applicant has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of its NPDES permit to discharge treated effluent into the Ashuelot River. The Hinsdale Wastewater Treatment Plant is a publicly owned treatment works (POTW) that collects and treats domestic and commercial wastewater. The facility provides secondary treatment with an activated sludge system at a design flow of 0.3 million gallons per day (mgd). Raw wastewater flows by gravity into the treatment plant headworks, where screenings and grit are removed. The wastewater is then pumped to a distribution box where it mixes with return sludge and then flows by gravity to one of the oxidation ditches for biological treatment (only one oxidation ditch is operated at a time). The wastewater then flows by gravity to the clarifiers and then to the chlorine contact tank. Sodium metabisulfite is used to dechlorinate the effluent before it finally flows by gravity to the Ashuelot River.

A permit was issued for this facility on August 20, 1999, and expired on September 19, 2004. The expired permit (hereafter referred to as the "existing permit") has been administratively extended as the applicant filed a complete application for permit reissuance within the prescribed time period as per 40 Code of Federal Regulations (CFR) §122.6.

The location of the treatment facility, Outfall 001 and the receiving water are shown in **Attachment A**. Their locations have not changed since the existing permit was issued.

## **II. Description of Discharge.**

A quantitative description of significant effluent parameters based on discharge monitoring data from the five year period January 2000 to December 2005 are shown in **Attachment B**.

## **III. Limitations and Conditions.**

The effluent limitations and monitoring requirements are found in PART I of the draft NPDES permit. The draft permit contains limitations for the following parameters: five-day Biochemical Oxygen Demand (BOD<sub>5</sub>), Total Suspended Solids (TSS), pH, *Escherichia coli* (*E. Coli*) bacteria, Total Residual Chlorine (TRC), and Whole Effluent Toxicity (WET). It also contains monitoring requirements for flow and for the following parameters associated with the WET test requirements: hardness, ammonia nitrogen (as nitrogen), and total recoverable aluminum, cadmium, chromium, copper, lead, nickel, and zinc. The basis for each limit and condition is discussed below in Section IV of this Fact Sheet.

## **IV. Permit Basis and Explanation of Effluent Limitations Derivation.**

### **A. Background**

Congress enacted the Clean Water Act (CWA), "to restore and maintain the chemical physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into waters of the United States from any point source, except as authorized by specified permitting sections of the CWA,

one of which is Section 402. See CWA §§ 301(a) and 402(a). Section 402 establishes one of the CWA's principal permitting programs, the National Pollutant Discharge Elimination System (NPDES). Under this section of the CWA, EPA may "issue a permit for the discharge of any pollutant, or combination of pollutants" in accordance with certain conditions. See CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. See CWA § 402(a)(1)-(2).

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: "technology-based" limitations and "water quality-based" limitations. See CWA §§ 301, 303, 304(b); 40 C.F.R. Parts 122, 125, 131. Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. See CWA § 301(b). As a class, POTWs must meet performance based requirements based on available wastewater treatment technology. CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment". Secondary treatment is comprised of technology-based requirements expressed in terms of BOD<sub>5</sub>, TSS, and pH. 40 C.F.R. Part 133.

Water quality-based effluent limits are designed to ensure that state water quality standards are met regardless of the decision made with respect to technology and economics in establishing technology-based limitations. In particular, Section 301(b)(1)(C) requires achievement of, "any more stringent limitation, including those necessary to meet water quality standards...established pursuant to any State law or regulation..." See 40 C.F.R. §§ 122.4(d), 122.44(d)(1) (providing that a permit must contain effluent limits as necessary to protect State water quality standards, "including State narrative criteria for water quality") (emphasis added) and 122.45(d)(5) (providing in part that a permit incorporate any more stringent limits required by Section 301(b)(1)(C) of the CWA).

The CWA requires that States develop water quality standards for all water bodies within the State. CWA § 303. These standards have three parts: (1) one or more "designated uses" for each water body or water body segment in the state; (2) water quality "criteria" consisting of numerical concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in each water body without impairing the designated uses of that water body; and (3) an antidegradation provision, focused on protecting high quality waters and protecting and maintaining water quality necessary to protect existing uses. CWA § 303(c)(2)(a); 40 C.F.R. § 131.12. The limits and conditions of the permit reflect the goal of the CWA and EPA to achieve and then to maintain water quality standards.

The applicable New Hampshire water quality standards can be found in Surface Water Quality Regulations, Chapter Env-Ws 1700 et seq. See generally, Title 50, Water Management and Protection, Chapter 485A, Water Pollution and Waste Disposal Section 485-A. The antidegradation requirements of the regulations are found in Env-Ws 1708. These Regulations were adopted on December 3, 1999, and became effective on December 10, 1999. Hereinafter, New Hampshire's Surface Water Quality Regulations are referred to as the NH Standards.

Receiving stream requirements are established according to numerical and narrative standards adopted under state law for each stream classification. When using chemical-specific numeric criteria from a State's water quality standards to develop permit limits, both the acute and

chronic aquatic life criteria are used and expressed in terms of maximum allowable in stream pollutant concentrations. Acute aquatic life criteria are generally implemented through maximum daily limits and chronic aquatic life criteria are generally implemented through average monthly limits. Chemical-specific limits are allowed under 40 CFR 122.44 (d)(1) and are implemented under 40 CFR §122.45(d). EPA notes the basis for the average weekly limit for POTWs under 40 CFR §122.45(d) derives from the secondary treatment requirements (BOD<sub>5</sub> and TSS) and this basis does not relate to assure achievement of water-quality standards based on acute and chronic criteria. The maximum daily limit as measured with a grab sample is protective of acute toxicity impacts. Therefore, the Region establishes maximum daily and average monthly limits for chemical specific toxic pollutants, such as Total Residual Chlorine. The dilution provided by the receiving water is factored into the effluent limit. Furthermore, narrative criteria from the state's water-quality standards are often used to limit toxicity in discharges where: (1) a specific pollutant can be identified as causing or contributing to the toxicity but the state has no numeric standard; or (2) toxicity cannot be traced to a specific pollutant.

All statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired. When technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. See 40 C.F.R. § 125.3(a)(1). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by an NPDES permit. The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. Parts 122, 124, 125, and 136.

## **B. Introduction**

The NPDES permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water quality standard, including narrative water quality criteria. See 40 C.F.R. 122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion.

The Hinsdale facility discharges to the Ashuelot River, which is classified as a Class B waterway by the New Hampshire Water Supply and Pollution Control Division. The outfall is about 0.95 miles above the River's confluence with the Connecticut River. Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, and shall contain a dissolved oxygen content of at least 75 percent saturation. See RSA 485-A:8. Designated uses are for the protection and propagation of aquatic life and wildlife, and for swimming and other recreational purposes, and after treatment for water supplies.

### **a. Reasonable Potential**

In determining reasonable potential, EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from permit applications, monthly discharge monitoring reports, and State and Federal water quality reports; (3) sensitivity of the species to toxicity testing; (4) statistical

approach outlined in *Technical Support Document for Water Quality-based Toxics Controls*, March 1991, EPA/505/2-90-001 in Section 3; and where appropriate, (5) dilution of the effluent in the receiving water. In accordance with the NH Standards (RSA 485-A:8VI, Env-Ws 1705.02), available dilution for rivers and streams is based on a known or estimated value of the lowest average flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10) for aquatic life and human health criteria for non-carcinogens, or the long-term harmonic mean flow for human health (carcinogens only) in the receiving water at the point just upstream of the outfall. Furthermore, 10 percent of the receiving water's assimilative capacity is held in reserve for future needs in accordance with Env-Ws 1705.01.

b. Anti-backsliding

Section 402(o) of the CWA generally provides that the effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the previous permit. EPA has also promulgated anti-backsliding regulations which are found at 40 C.F.R. § 122.44(l). Unless applicable anti-backsliding requirements are met, the limits and conditions in the reissued permit must be at least as stringent as those in the previous permit.

c. State Certification

Section 401(a)(1) of the CWA requires all NPDES permit applicants to obtain a certification from the appropriate state agency stating that the permit will comply with all applicable federal effluent limitation and state water quality standards. See CWA § 401(a)(1). The regulatory provisions pertaining to state certification provide that EPA may not issue a permit until a certification is granted or waived by the state in which the discharge originates. 40 C.F.R. § 124.53(a). The regulations further provide that, "when certification is required...no final permit shall be issued...unless the final permit incorporated the requirements specified in the certification under § 124.53(e)." 40 C.F.R. § 124.55(a)(2). Section 124.53(e) in turn provides that the State certification shall include "any conditions more stringent than those in the draft permit which the State finds necessary" to assure compliance with, among other things, State water quality standards, see 40 C.F.R. 124.53(e)(2), and shall also include "[a] statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law, including water quality standards," see 40 C.F.R. 124.53(e)(3). EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4(d) and 40 C.F.R. § 122.44(d).

**C. Flow**

The Hinsdale Wastewater Treatment Plant has been experiencing exceedances of the 0.3 MGD design flow due to inflow/infiltration in the sewer collection system. The NHDES-WD is working with the Town to restrict sewer usage and to investigate and reduce the inflow and infiltration volume. The Town is actively involved in a program of repairing pipes or replacing sewer pipes as necessary. The repair/replacement schedule is based on an extensive study done to find sources of inflow/infiltration.

## D. Conventional Pollutants

### a. BOD<sub>5</sub> and TSS

All the concentration and mass-based effluent limits for BOD<sub>5</sub> and TSS in the draft permit are the same as the limits in the existing permit and, therefore, are in accordance with antibacksliding requirements found in 40 CFR §122.44(1). The permittee has been able to achieve consistent compliance with those limits. The average monthly and average weekly concentration-based limits for BOD<sub>5</sub> and TSS are based on requirements under Section 301(b)(1)(B) of the CWA as defined by Secondary Treatment Standards in 40 CFR Section 133.102(a) and (b). The average monthly and average weekly mass-based limits for BOD<sub>5</sub> and TSS corresponding to the respective concentration-based limits in the draft permit are based on 40 CFR Section 122.45(f) which requires the Agency to apply these Secondary Treatment Standards (concentration-based) as mass-based limits.

Average monthly, average weekly and maximum daily allowable mass-based (load) limitations for BOD<sub>5</sub> and TSS shown in the draft permit are based on the POTW's daily design flow of 0.3 MGD and the appropriate constituent concentration for the respective time period being limited. See **Attachment C** for the equation used to calculate each of these mass-based limits.

Percent removal limits for BOD<sub>5</sub> and TSS, required under 40 CFR Sections 133.102 (a)(3) and (b)(3), respectively, are the same as the limits in the existing permit and in accordance with the antibacksliding requirements found in 40 CFR Section 122.44(1). Consistent with the July 19, 1999, EPA/NHDES-WD Effluent Monitoring Guidance, the compliance monitoring frequency for BOD<sub>5</sub> and TSS is two per week.

### b. E. Coli

The limit for *E. Coli* is based on requirements in the state's statutes (N.H. RSA 485-A:8) for a nondesignated beach area. Consistent with the July 19, 1999, EPA/NHDES-WD Effluent Monitoring Guidance, the compliance monitoring frequency for *E. Coli* in the draft permit is 3/week. Samples for *E. Coli* compliance monitoring must be taken concurrently with samples for total residual chlorine.

### c. pH

The limit for pH is based upon State Certification Requirements and RSA 485-A:8, which states that "The pH range for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes." Consistent with the July 19, 1999, EPA/NHDES-WD Effluent Monitoring Guidance, the compliance monitoring frequency for pH is 1/day.

The special condition for a change in the pH range in Part I.C of the existing permit is excluded from this draft permit because the Ashuelot River is pH impaired both upstream and downstream of Hinsdale's discharge. The pH demonstration study required to support a change in the pH range would not demonstrate that the in-stream standards for pH would be protected in this situation.

## E. Non-conventional and Toxic Pollutants

Water-quality based limits for specific toxic pollutants such as chlorine, ammonia, metals, etc. are determined from chemical specific numeric criteria derived from extensive scientific studies. The specific toxic pollutants and their associated toxicity criteria are popularly known as the “Gold Book Criteria” which EPA summarized and published in Quality Criteria for Water, 1986, EPA 440/5-86-001 (as amended). The State of New Hampshire adopted these “Gold Book Criteria”, with certain exceptions, and included them as part of the State’s Surface Water Quality Regulations adopted on December 3, 1999. EPA-New England uses these pollutant specific criteria, along with available dilution in the receiving water, to determine a specific pollutant's draft permit limit.

### a. Available Dilution

The dilution factor indicates the available dilution afforded the POTW’s effluent by the receiving water. The 7Q10 flow at the outfall is determined using the most recent streamflow data at the nearest U.S. Geological Survey (USGS gage number 01161000) gaging station because this gage is located on the Ashuelot River about 0.5 river miles upstream of the POTW’s outfall. Adjustments to include streamflow additions between that gage and the outfall are not necessary. The 7Q10 low flow is 40.48 cubic feet per second (cfs) based on the streamflow data restricted to the period 1959 to 2006. This period is selected for the low-flow analysis because these streamflow data represents the current regulated flow regime in the Ashuelot River basin. The dilution factor of **79.3** is calculated using the 7Q10 value of 40.48 cfs, design flow of 0.3 mgd, and 10 percent assimilative reserve capacity as described in **Attachment C**.

In the existing permit, the dilution factor was calculated at 92 following the procedures and data described above, using a 7Q10 flow of 46.8 cfs. This higher 7Q10 flow was based on streamflow data for a time period from 1908 to about 1996. EPA and NHDES have determined that using this period is not appropriate for the low flow analysis because the flow regime represents a mixed regulation pattern prior to 1959 and the current regulated flow regime after 1959. The use of the revised dilution factor of 79.3 has not resulted in the need for more stringent effluent limitations.

### b. Total Residual Chlorine

The maximum daily Total Residual Chlorine (TRC) effluent limitation of 0.5 mg/L in the draft permit is continued from the limit in the existing permit. This TRC limit is based on the existing TRC limit in accordance with the antibacksliding requirements found in 40 CFR §122.44(l) since the permittee has been able to achieve consistent compliance with this limit. This TRC effluent limit was first imposed in Hinsdale’s 1987 permit to protect aquatic life. According to the 1987 permit, this limit was based on state certification requirements for POTWs.

The TRC limit is more stringent than the average monthly and maximum daily TRC limits that are calculated using the numeric chronic and acute aquatic-life criteria for chlorine in the NH Standards and the available dilution in the Ashuelot River. These TRC calculations are shown in **Attachment C** and result in potential chronic and acute limits of 1.0 mg/L and 0.87 mg/L,



respectively. The more restrictive maximum daily limit of 0.5 mg/L is retained in this draft permit due to the antibacksliding provisions.

## **F. Whole Effluent Toxicity (WET)**

EPA's **Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991**, recommends using an "integrated strategy" containing both pollutant (chemical) specific approaches and whole effluent (biological) toxicity approaches to control toxic pollutants in effluent discharges from entering the nation's waterways. EPA-New England adopted this "integrated strategy" on July 1, 1991, for use in permit development and issuance. These approaches are designed to protect aquatic life and human health. Pollutant specific approaches such as those in the Gold Book and State regulations address individual chemicals, whereas, Whole Effluent Toxicity (WET) approaches evaluate interactions between pollutants, thus rendering an "overall" or "aggregate" toxicity assessment of the effluent. Furthermore, WET measures the "additivity" and/or "antagonistic" effects of individual chemical pollutants which pollutant specific approaches do not, thus the need for both approaches. In addition, the presence of an unknown toxic pollutant can be discovered and addressed through this process.

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts and New Hampshire law states that, "all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life;...." (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Ws 1730.21(a). The federal NPDES regulations at 40 CFR §122.44(d) (1) (v) require whole effluent toxicity limits in a permit when a discharge has a "reasonable potential" to cause or contribute to an excursion above the State's narrative criterion for toxicity. Inclusion of the whole effluent toxicity limit in the draft permit will demonstrate the compliance with narrative water quality criteria of "no toxics in toxics amounts" found in both the CWA and State of New Hampshire regulations.

The current policy of EPA-NEW England is to require toxicity testing in all municipal permits with the type of toxicity test(s) (acute and/or chronic) and effluent limitation(s) (LC50 and/or C-NOEC) based on the available dilution. The toxicity tests and frequency are shown in the attached Toxicity Policy for Major and Minor Municipal Permits (**Attachment D**). With a dilution factor of 92, this Toxicity Policy required the testing frequency of four times per year in the existing permit.

Permittees who consistently demonstrated that no potential toxicity exists as a result of the pollutants in its discharge, based on data for the most recent one year period, or four sampling events, whichever yields the greater time period, will be considered for a reduced frequency of testing. If the above criteria are met, the permit may be formally modified. The 1999 draft Hinsdale permit included a previous WET test frequency reduction that was authorized in 1997, to twice/year, authorized under the 1993 permit. During the final 1999 permit decision, EPA agreed with the Town's request and reduced the toxicity testing to once per year.

A review of the four most recent WET test reports indicates that these tests are valid and demonstrate compliance with the 100 % permit limit for Whole Effluent Toxicity. This draft permit requires WET testing once per year. The 100% limit means that a sample of 100%

effluent shall have no greater than a 50% mortality rate. The permittee is required to collect and test effluent samples once per year during the calendar quarter ending September 30<sup>th</sup> using two species, *Ceriodaphnia dubia* (Daphnia) and *Pimephales promelas* (Fathead Minnow).

The WET limits in the draft permit include conditions to allow EPA-New England to modify, or alternatively, revoke and reissue to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any State water quality criterion. Results from these toxicity tests are considered “New Information” and the permit may be modified as provided in 40 CFR §122.62(a)(2).

This draft permit, as in the existing permit, requires the permittee to continue reporting selected parameters from the chemical analysis of the WET tests’ 100 percent effluent sample. Specifically, hardness, total ammonia nitrogen as nitrogen, and total recoverable aluminum, cadmium, copper, chromium, lead, nickel and zinc are to be reported on the appropriate DMR for entry into EPA's data base. EPA-New England does not consider these reporting requirements an unnecessary burden as reporting these constituents is already required with the submission of each toxicity testing report.

## **G. Sludge**

Section 405(d) of the Clean Water Act (CWA) requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations were signed on November 25, 1992, published in the Federal Register on February 19, 1993, and became effective on March 22, 1993. Domestic sludge which is land applied, disposed in a surface disposal unit, or fired in a sewage sludge incinerator is subject to Part 503 technical and to State Env-Ws 800 standards. Part 503 regulations have a self-implementing provision, however, the CWA requires implementation through permits. Domestic sludge which is disposed in municipal solid waste landfills are in compliance with Part 503 regulations provided the sludge meets the quality criteria of the landfill and the landfill meets the requirements of 40 CFR Part 258.

The draft permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards. In addition, EPA-New England has included with the draft permit a 72-page document entitled “EPA Region I NPDES Permit Sludge Compliance Guidance, November 1999” for use by the permittee in determining the appropriate sludge conditions for the chosen method of sewage sludge use or disposal practices.

The permittee is required to submit an annual report to EPA-New England and NHDES-WD, by February 19<sup>th</sup> each year, containing the information specified in the Sludge Compliance Guidance document for their chosen method of sewage sludge use or disposal practices. All sludges generated at the Hinsdale facility are hauled as a liquid sludge by Casella Waste Management, Inc. for disposal at the Erving Paper Mill in Erving, Massachusetts.

## **H. Industrial Users (Pretreatment Program)**

The permittee is not required to administer a pretreatment program based on the authority granted under 40 CFR §122.44(j), 40 CFR §403 and Section 307 of the Act. However, the draft permit contains conditions that are necessary to allow EPA and NHDES-WD to ensure that

pollutants from industrial users will not pass through the facility and cause water quality standards violations and/or sludge use and disposal difficulties or cause interference with the operation of the treatment facility. The permittee is required to notify EPA and NHDES-WD whenever a process wastewater discharge to the facility from a primary industrial category (see 40 CFR §122 Appendix A) is planned or if there is any substantial change in the volume or character of pollutants being discharged into the facility by a source that was discharging at the time of issuance of the permit. The permit also contains the requirements to: 1) report to EPA and NHDES-WD the name(s) of all Industrial Users subject to Categorical Pretreatment Standards (see 40 CFR §403 Appendix C) who commence discharge to the POTW after the effective date of the finally issued permit, and 2) submit copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users to EPA and NHDES-WD.

### **I. Unauthorized Discharges**

The draft permit includes a provision stating that only discharges in accordance with the terms and conditions of the permit and only from Outfall 001 are authorized. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Part II Standard Conditions, Section D.1.e.(1) of this permit.

### **J. Operation and Maintenance**

The Hinsdale treatment plant is a Publicly Owned Treatment Works (POTW). A POTW is a treatment works, as defined by CWA § 212, that is owned by the State or municipality. The regulatory definition found at 40 CFR § 403.3 includes the systems and devices used in the storage treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. This definition also includes sewers, pipes, and other conveyances that convey wastewater to a POTW treatment plant.

Regulations regarding proper operation and maintenance are found at 40 C.F.R. § 122.41(e). These regulations require, “that the permittee shall at all times operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.” The treatment plant and collection system are included in the definition “facilities and systems of treatment and control” and are therefore subject to proper operation and maintenance requirements.

Similarly, a permittee has a “duty to mitigate” pursuant to 40 C.F.R. § 122.41(d), which requires the permittee to “take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment.”

The draft permit requires the permittee to provide an alternate power source sufficient to operate its POTW as defined above. This requirement is necessary to maintain compliance with the terms and conditions of this permit.

General requirements for proper operation and maintenance, and mitigation are in Part II, Standard Conditions. Specific permit conditions are also included in Parts. I.B, I.C, and I.D.

These requirements include reporting of unauthorized discharges including sanitary sewer overflows (SSOs), maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to the extent necessary to prevent SSOs and infiltration/inflow related effluent violations at the wastewater treatment plant, and maintaining alternate power where necessary.

#### **K. Additional Requirements and Conditions**

The effluent monitoring requirements in the draft permit have been established to yield data representative of the discharge under the authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48. The remaining conditions of the permit are based on the NPDES regulations 40 CFR, Parts 122 through 125, and consist primarily of management requirements common to all permits.

#### **L. Essential Fish Habitat.**

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104267), established a new requirement to describe and identify (designate) “essential fish habitat” (EFH) in each federal fishery management plan. Only species managed under a federal fishery management plan are covered. Fishery Management Councils determine which area will be designated as EFH. The Councils have prepared written descriptions and maps of EFH, and include them in fishery management plans or their amendments. EFH designations for New England were approved by the Secretary of Commerce on March 3, 1999.

The 1996 Sustainable Fisheries Act broadly defined EFH as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” Waters include aquatic areas and their associated physical, chemical, and biological properties. Substrate includes sediment, hard bottom, and structures underlying the waters. Necessary means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem. Spawning, breeding, feeding, or growth to maturity covers all habitat types utilized by a species throughout its life cycle. Adversely affect means any impact which reduces the quality and/or quantity of EFH. Adverse impacts may include direct (i.e. contamination, physical disruption), indirect (i.e. loss of prey), site specific or habitat wide impacts including individual, cumulative, or synergistic consequences of actions.

According to the National Marine Fisheries Service (NMFS), the Connecticut River and its tributaries, including the Ashuelot River, are designated EFH for Atlantic salmon (*Salmo salar*). According to the New Hampshire Department of Fish and Game, Atlantic salmon fry stocking is occurs in the upstream tributaries in the vicinity of Swanzey and Winchester and the headwater streams tributary to the Ashuelot River far upstream of Keene. The main stem of the Ashuelot River in Winchester is stocked with rainbow and brown trout. Adult shad are relocated from the Connecticut River impoundment at Holyoke, MA to the Ashuelot River in Swanzey for spawning.

The Atlantic salmon smolts and juvenile shad will pass by Hinsdale's plant during migration. EPA has concluded that the limits and conditions contained in the draft permit minimize adverse effects to EFH for the following reasons:

- The permit prohibits the discharge to cause a violation of State water quality standards.
- The permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts.
- The permit requires toxicity annual testing to ensure that the discharge does not present toxicity problems.
- The permit contains a total residual chlorine limit more stringent than the water quality criteria based limit.

EPA believes the draft permit adequately protects EFH and therefore additional mitigation is not warranted. NMFS will be notified and EFH consultation will be reinitiated if adverse impact to EFH are detected as a result of this permit action or if new information becomes available that changes the basis for these conclusions.

#### **M. Endangered Species**

The Endangered Species Act (16 U.S.C. 1451 et seq), Section 7, requires the EPA to ensure, in consultation with the U.S. Fish and Wildlife Service (USFWS) and/or NMFS, as appropriate, that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered or threatened species, or adversely affect its critical habitat.

EPA believes that the authorized discharge from this facility is not likely to adversely affect and federally listed species or their habitats. EPA informally consulted with the USFWS to confirm this determination. USFWS has indicated that no federally listed or proposed, threatened or endangered species or critical habitat are known to occur in the area of the Hinsdale POTW; and further Endangered Species Act consultation is not required unless additional listed or proposed information becomes available (A.P. Tur, USFWS, Hinsdale Wastewater Treatment Plant letter, July 11, 2007).

#### **N. Antidegradation**

This draft permit is being reissued with allowable wasteloads and parameter coverage identical to those in the current permit with no change in outfall location. The State of New Hampshire has indicated that there is no lowering of water quality and no loss of existing water uses and that no additional antidegradation review is warranted at this time.

#### **V. State Certification Requirements.**

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations and/or conditions contained in the permit are stringent enough to assure, among other things, that the discharge will not cause the receiving water to violation NH standards or waives its right to certify as set forth in 40 C.F.R. §124.53.

Upon public noticing of the draft permit, EPA is formally requesting that the State's certifying authority make a written determination concerning certification. The State will be deemed to have waived its right to certify unless certification is received within 60 days of receipt of this request.

The NHDES-WD, Wastewater Engineering Bureau is the certifying authority. EPA has discussed this draft permit with the staff of the Wastewater Engineering Bureau and expects that the draft permit will be certified. Regulations governing state certification are set forth in 40 C.F.R. §§ 124.53 and 124.55.

The State's certification should include the specific conditions necessary to assure compliance with applicable provisions of the CWA, Sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law. In addition, the State should provide a statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition. These less stringent conditions may be established by EPA during the permit issuance process based on information received following the public notice of the draft permit. If the State believes that any conditions more stringent than those contained in the draft permit are necessary to meet the requirements of either the CWA or State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition.

Reviews and appeals of limitations and conditions attributable to State Certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures set forth in 40 C.F.R. Part 124.

## **VI. Comment Period, Hearing Requests, and Procedures for Final Decisions.**

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period to:

William Wandle  
U.S. Environmental Protection Agency  
Region I, Office of Ecosystem Protection  
One Congress Street, Suite 1100 (CMP)  
Boston, Massachusetts 02114-2023  
Telephone (617) 918-1605, FAX No.: (617) 918-0605

and

Susan A. Willoughby  
New Hampshire Department of Environmental Services, Water Division  
Wastewater Engineering Bureau, Permits & Compliance  
29 Hazen Drive, P.O. Box 95  
Concord, NH 03301  
Telephone (603) 271-3307, FAX No.: (603) 271-4128

Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA Boston office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

## **VII. EPA and NHDES Contacts.**

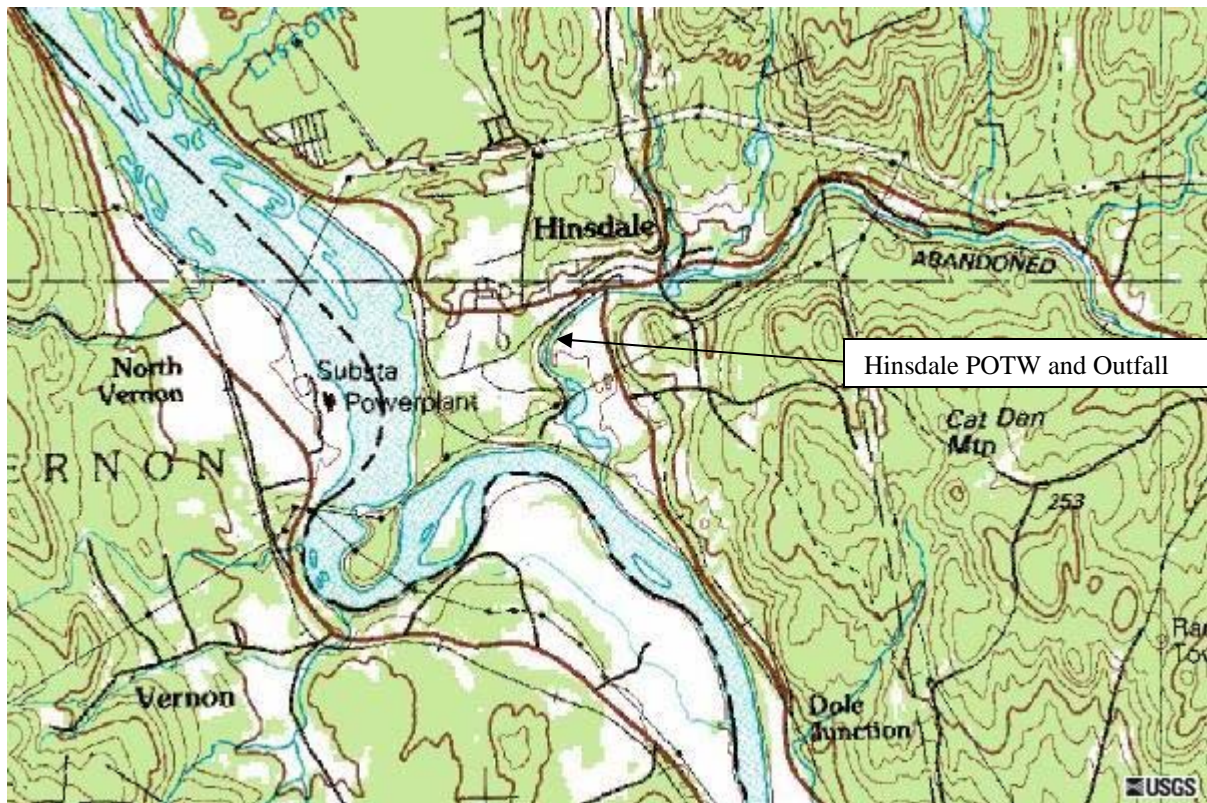
Additional information concerning the draft permit may be obtained from the contact persons named above between the hours of 8:30 A.M. and 4:30 P.M. (8:00 A.M. and 4:00 P.M. for the state), Monday through Friday, excluding holidays.

**August 9, 2007**  
**Date:**

**Stephen S. Perkins, Director**  
**Office of Ecosystem Protection**  
**U.S. Environmental Protection Agency**

ATTACHMENT A

Location of Hinsdale Wastewater Treatment Plant and Outfall





## ATTACHMENT B

### CONCENTRATIONS OF EFFLUENT CHARACTERISTICS AT OUTFALL 001

The following effluent characteristics were derived from analysis of discharge-monitoring data collected from Outfall 001 during the five year period January 2000 through December 2005. Data were extracted from the monthly Monthly Operating Reports submitted by the Hinsdale Wastewater Treatment Plant. The effluent values characterize treated sanitary and commercial wastewaters discharged from this facility.

Parameter	Average of Monthly Averages	Range of Monthly Averages	Maximum Daily
Effluent Flow (mgd)	0.233	0.102 - 0.466	0.7942 <sup>1</sup>
Effluent BOD <sub>5</sub> (mg/l)	10.77	2.0 – 25.0	69.1
Effluent BOD <sub>5</sub> (lb/day)	19.9	4.63 – 54.85	68.7 <sup>1</sup>
Effluent TSS (mg/l)	7.186	1.28 - 50.18	133
Effluent TSS (lb/day)	12.87	3.05 – 49.05	60.29 <sup>1</sup>
Effluent pH (s.u.)	NA	NA	7.96
Total Residual Chlorine	0.032	0 – 0.14	0.5
<b><i>Range of WET Test Results</i></b>			
	Ceriodaphnia dubia	Pimephales promelas	
LC50 (% Effluent)	> 100%	>100%	

<sup>1</sup> Maximum daily effluent flow based on data spanning January 2003 to December 2005.

## ATTACHMENT C

### CALCULATIONS OF MASS-BASED LIMITS

Calculations of maximum allowable loads for average monthly BOD<sub>5</sub> and TSS are based on the following equation.

$$L = 8.345 * Q * C$$

Where:

L = Maximum allowable load, in lbs/day, rounded to nearest 1 lbs/day.

C = Maximum allowable effluent concentration for average monthly reporting period, in mg/L.

Q<sub>PDF</sub> = Treatment plant's design flow, in MGD

8.345 = Factor to convert effluent concentration, in mg/L, and plant's design flow, in MGD, to lbs/day.

### DILUTION FACTOR

Equation used to calculate available dilution factor at Outfall 001:

$$DilutionFactor = \frac{(Q_{001}) + (Q_{PDF} \times 1.547)}{Q_{PDF} \times 1.547} \times 0.9$$

where:

Q<sub>001</sub> = Estimated 7Q10 flow at Outfall 001, in cfs;

Q<sub>PDF</sub> = Treatment plant's design flow, in mgd;

1.547 = Factor to convert mgd to cfs

0.9 = Factor to reserve 10% of river's assimilative capacity.

### WATER-QUALITY BASED LIMIT

Equation used to calculate the potential Average Monthly and Maximum Daily Total Residual Chlorine limits:

Potential Chlorine Limit = Dilution Factor x Water Quality Criteria

Where Water Quality Criteria for chlorine are:

0.011 = Chronic Aquatic-Life Criteria, mg/L

0.019 = Acute Aquatic-Life Criteria, mg/L

Potential Average Monthly Limit = 79.3 x 0.011 = 0.87 mg/L

Potential maximum Daily Limit = 79.3 x 0.019 = 1.51 mg/L which can not exceed 1.0 mg/L based on a Region I determination.

## ATTACHMENT D

## EPA Toxicity Policy for Major and Minor Municipal Facilities

	HIGH RISK	MED-HIGH RISK	MED-LOW RISK	LOW RISK	VERY LOW RISK
Dilution Factor	<10:1	10:1-20:1	20:1-100:1	>100:1	>1000:1
# of Sampling Events Per Year	4 (1/3 Months)	4 (1/3 Months)	Majors: 4 (1/3 Months) Minors: 1 (1/year)	Majors: 2 (1/6 months) Minors: 1 (1/year)	Majors: 2 (1/6 months) Minors: None
Toxicity Tests: Fresh Water Marine Water	Chronic <sup>1</sup> Chronic & Acute	Chronic <sup>1</sup> Chronic & Acute	Acute Acute	Acute Acute	Acute Acute
Number of Species: Fresh Water Marine Water	2 3	2 3	2 2	2 2	2 2
Permit Limits	LC50 <sub>≥</sub> 100% C-NOEC <sup>2</sup> <sub>≥</sub> RWC <sup>3</sup>	LC50 <sub>≥</sub> 100%	LC50 <sub>≥</sub> 100%	LC50 <sub>≥</sub> 50%	LC50 <sub>≥</sub> 100%
Test Species: Fresh Water  Marine Water	Daphnid <sup>1</sup> ( <i>Ceriodaphnia dubia</i> ) Fathead Minnow <sup>1</sup> ( <i>Pimephales promelas</i> )  Inland Silverside <sup>1</sup> ( <i>Menidia beryllina</i> ) Mysid Shrimp ( <i>Mysidopsis bahia</i> ) Sea Urchin ( <i>Arbacia punctulata</i> )		Daphnid ( <i>Ceriodaphnia dubia</i> ) Fathead Minnow ( <i>Pimephales promelas</i> )  Inland Silverside ( <i>Menidia beryllina</i> ) Mysid Shrimp ( <i>Mysidopsis bahia</i> )		Daphnid ( <i>Ceriodaphnia dubia</i> ) Fathead Minnow ( <i>Pimephales promelas</i> )  Inland Silverside ( <i>Menidia beryllina</i> ) Mysid Shrimp ( <i>Mysidopsis bahia</i> )

<sup>1</sup> 7-Day Chronic/Modified Acute.<sup>2</sup> C-NOEC is Chronic No Observed Effect Concentration.<sup>3</sup> RWC is Receiving Water Concentration, in percent, as determined from dividing one by the dilution factor all multiplied by 100.